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WINTER WORK AGAINST FRUIT DISEASES

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The time of year is at hand when ordinary farm work is not so pressing, and the careful man will utilize this time to put his machinery and general equipment into good condition for the next season's work. He has invested a considerable capital in implements, buildings and orchards, and expects to receive some interest on his investment. This interest is more certain and regular if everything about the farm is in good order and kept in repair, than can be the case when carelessness or thoughtlessness allow disorder to prevail and needed repairs to accumulate.

Among the forms of invested capital in Maryland the orchards represent a large value. In order that they shall return their proper interest, the trees must be kept vigorous and healthy. It is only by giving thought to their prevention now while in the dormant condition that the diseases which play havoc in the summer can be controlled. This time of comparative leisure, giving time to catch up with the year's work, should not only include the proper storing under shelter of tools and machinery and the repair of buildings and fences, but the cleaning up of the orchard, vineyard, berry patch, so that the new season can begin under as favorable conditions as can be given. It will be found advantageous to the farmer or fruit-grower to do this cleaning up during the fall and early winter, as soon cold weather may be preventative of such work, and in spring he will have the spraying and a thousand other things to look after.

This circular bulletin is sent out to furnish a guide to the winter management of orchards with regard to some of the more dangerous diseases. Among these are peach yellows, pear blight and black knot. Yellows has been found in all the northern and western parts of the State. Pear blight and black knot are of common occurrence and dangerous, but usually not so destructive.

PEACH YELLOWS.

All peach trees which showed during last summer on some or all of the branches the prematuring fruit with its peculiar red spots on the outside and in the flesh, so characteristic of this disease, should have been marked for taking out at this time, if it was not possible to destroy them at once. Where the yellows inspectors were able to go this year, such trees will be found designated by a tag or some other easily recognized mark.

Trees in the second stage of yellows can be told by the slender shoots usually in bunches, and at this time, and even later, often still bearing the narrow yellow leaves produced by this disease. It is a matter of only another season before such trees will die of the disease in most cases; and if any fruit is borne it will be of very inferior quality. Such trees, moreover, become the sources from which infection may spread, until many other trees are involved. *Any tree showing these indications should be cut down and burned at once; the longer it stands the more damage is done to the orchard, for there is no cure.* Do not drag away the tree cut down, but either burn it where it stood or cut it into cord size and load into carts, burning all brush, etc., where made. An excellent plan is to put a lot of brush, including trimmings from the tree itself, straw, etc., among the branches and around the trunk of the tree, which is then set on fire. In this way the smaller parts are disposed of with no possibility of spreading the trouble, and the portion left can be utilized for firewood with safety.

PEAR BLIGHT.

The injury done by fire blight during the last season can be seen now with some ease by examining the affected trees. The diseased branches usually have the dead leaves still hanging at this time. Twigs and smaller branches showing the dead sunken bark, characteristic of the disease, should be carefully cut out. Make the cut not less than six inches below the lowest visible sign of the disease, and dip the knife in carbolic acid water after each cut to prevent the transfer of germs from cut to cut.

Cover promptly any large cut surface with some cheap oil paint. This will not only exclude these germs but many others, and will keep the stubs of branches, etc., from drying out. This should always be done in trimming trees for any purpose. The young trees should be kept pruned into such shape that cases of blight on the twigs can be cut out before the disease gets too close to trunk or main branches. Blooming spurs on the lower part of the tree are always a source of danger from this cause.

Most of the body blight, especially on Kieffer pears, is from other causes. As this trouble often follows winter injuries, cracks, etc, the trees should be watched in early spring for the first indications of this disease, and the diseased portions cut away from the bark before it has time to spread.

BLACK KNOT.

This trouble of plum and cherry is not difficult to control in itself. The difficulty lies in the removal of wild trees which are also affected, and which are the source of infection, even after the orchard has been cleared up in respect to the disease. The wild cherry trees, as well as the knots in the orchard, should be removed if one wants to develop an orchard of plum or cherry.

The knots are due to a presence of a fungus in the growing cells of the wood, causing an unusual development of those cells. After the knot is formed the fungus produces spores of two kinds—one developing in the early part of summer (June), the other towards fall. Both kinds cause new knots when they germinate and have a chance to grow. The remedy is to cut out all knots in the fall or winter, spraying in addition before buds start in the spring, to kill any spores that may have lodged on the tree.

GENERAL DIRECTIONS.

The fruit grower should look after his own business and the interest of his investment in fruit trees sufficiently to cut out and destroy such trees as may be affected without waiting to be notified of their presence. It is impossible that the State Horticultural Inspectors should visit all places in a year's time. The owner or his tenant is on the place daily, and can keep closer watch on the conditions than is possible on an occasional visit on the part of an inspector. The owner should, as all good orchardists do, know his orchard before and after the inspector calls, and attend on his own account to the aids to the health of his orchard which he knows are necessary in this region—fungicides, insecticides, cultivation and other improved methods of management.

Judicious pruning of fruit trees is very essential—the removal of dead or dying, especially of diseased branches, should be attended to as surely as the shoeing of the horses. The annual spraying against fungi and insects should be as much a part of the year's work as plowing.

Piles of trash should not be left in or near the orchard or other fruit fields. They harbor many insects and diseases, besides being unsightly and useless. The brush fire is an excellent preventative measure. A fall fire for summer's trash and a spring fire for the prunings and trimmings from

the orchard should be part of every farmer's calendar. Burn all trash not of value for fuel or stable use. Burn also the remains of rotten or dried up apples, pears, plums and peaches left on the trees, or under them, by the action of the rot fungi. It has been found that much of the rapid spread of these diseases in the early spring and summer is due to the spores holding over from the previous season on the partially decayed fruits, or to the development of especially active spores from fungi remaining dormant in these fallen mummies. Much can be done to check this loss by destroying them before spring.

In the case of field crops—if any have had serious diseases this season—do not use the same crop on the affected fields next year. Cabbage, cauliflower and turnips should not follow one another in a field where club root, black rot or soft heart (heart rot) has occurred, as each is affected by the same diseases that attack the others. Potatoes and beets should not follow each other for the same reasons on fields in which the scab is serious.

PREPARATIONS FOR SPRING TREATMENT.

Now is the time to begin to arrange for the spring spraying. Nine times out of ten, it takes about twice as long as was thought to get the sprayer going, because something was not thought of or was not on hand when needed. The pumps should be got in order, hose, nozzles or other necessary new parts obtained, and the materials on hand long before it is thought that they will be needed. Moreover, spring may come earlier than expected, and the buds be too far along for the first spraying before it can be done unless everything is in readiness.

The plans of what is to be treated for can be made while the losses from diseases liable to recur are fresh in mind. In very few cases it is possible to do any good after one waits to see whether the blight, rust, spot, rot or scab is coming. The treatments used are nearly all preventatives. Be ready for what will probably occur.